Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-11. (Canceled)

12. (Currently Amended) An audio fingerprinting method comprising:

receiving an audio signal associated with an audio piece;

obtaining a plurality of frequency measurements of the audio signal;

building [[a]] an NxM matrix A based on the frequency measurements;

performing a singular value decomposition on the matrix A, wherein $A = USV^T$, and wherein U is an NxM orthogonal matrix, S in an MxM diagonal matrix, and V^T is a transpose of an MxM orthogonal matrix;

retrieving one or more rows of matrix V^T; and

storing the retrieved rows of matrix V^T in a data store in association with the audio piece, wherein a request including the retrieved rows of matrix V^T is received by an application program and information stored in a database for the audio piece identified and retrieved based on the rows of matrix V^T in the request.

13. (Original) The method of claim 12, wherein rows of the matrix A represent time, and columns of the matrix A represent the frequency measurements.

14. (Canceled)

15. (Previously Presented) The method of claim 12, wherein the information is an audio profile vector storing acoustic analysis data for the audio piece.

16-38. (Canceled)

39. (Currently Amended) An audio fingerprinting system comprising:

an audio file reader reading an audio file storing an audio piece;

a processor coupled to the audio file reader, the processor being configured to:

obtain a plurality of frequency measurements of audio signals associated with the audio piece;

build [[a]] <u>an NxM</u> matrix A based on the frequency measurements;

perform a singular value decomposition on the matrix A, wherein A = USV^T<u>, and wherein U is an NxM orthogonal matrix, S in an MxM diagonal matrix, and V^T is a transpose of an MxM orthogonal matrix</u>; and

retrieve one or more rows of matrix V^T;

a data store coupled to the processor storing the retrieved rows of matrix V^T in association with the audio piece; and

a database storing information for a plurality of audio pieces, wherein a request including the retrieved rows of matrix V^T is received by an application program and information for the audio piece stored in the database identified and retrieved based on the rows of matrix V^T in the request.

40. (Original) The system of claim 39, wherein rows of the matrix A represent time, and columns of the matrix A represent the frequency measurements.

41. (Canceled)

42. (Previously Presented) The system of claim 39, wherein the information is an audio profile vector storing acoustic analysis data for the audio piece.

43-52. (Canceled)

53. (Currently Amended) An article of manufacture comprising a computer readable medium having computer usable program code containing executable instructions that, when executed, cause a computer to perform the steps of:

obtaining a plurality of frequency measurements of an audio signal associated with an audio piece;

building [[a]] <u>an NxM</u> matrix A based on the frequency measurements;

performing a singular value decomposition on the matrix A, wherein A = USV^T<u>, and wherein U is an NxM orthogonal matrix, S in an MxM diagonal matrix, and V^T is a transpose of an MxM orthogonal matrix</u>;

retrieving one or more rows of matrix V^T; and

storing the retrieved rows of matrix V^T in a data store in association with the audio piece.

54. (Original) The article of manufacture of claim 53, wherein rows of the matrix A represent time, and columns of the matrix A represent the frequency measurements.

55. (Canceled)

56. (Previously Presented) The method of claim 15 further comprising recommending a second audio piece based on the acoustic analysis data.

57. (Previously Presented) The method of claim 15, wherein the audio profile vector quantifies a degree of similarity of the audio piece to audio pieces classified into a particular audio class.

58. (Previously Presented) The method of claim 57 further comprising generating an identifier for the particular audio class, the generating including:

selecting audio pieces associated with the particular audio class;

computing a second audio fingerprint for each selected audio piece;

calculating an average of the computed second audio fingerprints;

associating the calculated average to the particular audio class; and

storing the calculated average in a data store as the identifier of the particular audio class.

59. (Currently Amended) The method of claim 58, wherein computing of the second audio fingerprint comprises:

obtaining from a particular audio signal associated with the selected audio piece a plurality of frequency measurements;

building [[a]] an NxM matrix A' based on the frequency measurements;

performing a singular value decomposition on the matrix A', wherein A' = [[USV^T]] $U'S'V^{T}{}'$, and wherein U' is an NxM orthogonal matrix, S' in an MxM diagonal matrix, and $V^{T}{}'$ is a transpose of an MxM orthogonal matrix;

retrieving one or more rows of matrix $V^{T}{}'$; and

associating the retrieved rows of matrix $V^{T}{}'$ with the selected audio piece.

60. (Currently Amended) The method of claim 59, wherein rows of the matrix A' represent time, and columns of the matrix A' represent the frequency measurements.

61. (Previously Presented) The method of claim 12, further comprising generating an index of the audio piece, the generating including:

automatically obtaining from the audio signal associated with the audio piece a list of musical notes included in the audio piece;

determining from the audio signal a prominence of the musical notes in the audio piece; and

selecting a pre-determined number of most prominent musical notes in the audio piece as the index.

62. (Previously Presented) The method of claim 61, wherein the selected musical notes are translated to musical note numbers, and the index includes the translated musical note numbers.

63. (Previously Presented) The method of claim 61, wherein data stored in the database is organized into one or more groups, wherein each group is identified by a particular index.

64. (Previously Presented) The method of claim 63, wherein a search of the database for the information for the audio piece limited to a group identified by the generated index.

65. (Previously Presented) The system of claim 39, wherein the processor is further configured to recommend a second audio piece based on the acoustic analysis data.

66. (Previously Presented) The system of claim 42, wherein the audio profile vector quantifies a degree of similarity of the audio piece to audio pieces classified into a particular audio class.

67. (Previously Presented) The system of claim 66, wherein the processor is further configured to generate an identifier for the particular audio class, the generating including:

selecting audio pieces associated with the particular audio class;

computing a second audio fingerprint for each selected audio piece;

calculating an average of the computed second audio fingerprints;

associating the calculated average to the particular audio class; and

storing the calculated average in a data store as the identifier of the particular audio class.

68. (Currently Amended) The system of claim 67, wherein computing of the second audio fingerprint comprises:

obtaining from a particular audio signal associated with the selected audio piece a plurality of frequency measurements;

building an NxM matrix A' based on the frequency measurements;

performing a singular value decomposition on the matrix A', wherein A' = $[[USV^T]]$ $U'S'V^{T}{'}$, and wherein U' is an NxM

orthogonal matrix, S' in an MxM diagonal matrix, and $V^{T'}$ is a transpose of an MxM orthogonal matrix;

retrieving one or more rows of matrix $V^{T'}$; and

associating the retrieved rows of matrix $V^{T'}$ with the selected audio piece.

69. (Currently Amended) The system of claim 68, wherein rows of the matrix A' represent time, and columns of the matrix A' represent the frequency measurements.

70. (Previously Presented) The system of claim 39, wherein the processor is further configured to generate an index of the audio piece, the generating including:

automatically obtaining from the audio signal associated with the audio piece a list of musical notes included in the audio piece;

determining from the audio signal a prominence of the musical notes in the audio piece; and

selecting a pre-determined number of most prominent musical notes in the audio piece as the index.

71. (Previously Presented) The system of claim 70, wherein the selected musical notes are translated to musical note numbers, and the index includes the translated musical note numbers.

72. (Previously Presented) The system of claim 70, wherein data stored in the database is organized into one or

more groups, wherein each group is identified by a particular index.

73. (Previously Presented) The system of claim 72, wherein a search of the database for the information for the audio piece limited to a group identified by the generated index.

74. (New) An audio fingerprinting method comprising:

identifying an audio piece containing audio signals;

obtaining a plurality of frequency measurements associated with the audio signals;

building an NxM matrix A based on the frequency measurements;

performing a singular value decomposition on the matrix A, wherein $A = USV^T$, and wherein U is an NxM orthogonal matrix, S is an MxM diagonal matrix, and V^T is a transpose of an MxM orthogonal matrix;

retrieving one or more rows of matrix V^T; and

storing the retrieved rows of matrix V^T in a data store in association with the audio piece.

75. (New) The method of claim 74, wherein rows of the matrix A represent time, and columns of the matrix A represent the frequency measurements.